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ABSTRACT

This report presents recommendations of a national forum of education, industry, and government leaders on the integration of learning and work in postsecondary curricula. A glossary explains key terminology in the report. Introductory information stresses the importance of integrating K-12 education, postsecondary education, and industry, and the benefits for postsecondary education of applied learning curricula like cooperative education. Charts summarize recommended action steps and outcomes of the forum discussions. Six broad recommendations are made: (1) build a lifelong system of integrating learning and work; (2) disseminate data, models, and "best practices"; (3) enhance student learning through academically approved work experiences; (4) develop faculty support for the integration of learning and work; (5) foster institutional change to incorporate contextual learning strategies; and (6) build strong local partnerships to support sustainable, effective, learning systems. Also included are an outline of key elements in the cooperative education model, a list of key elements for institutionalizing work-integrated learning curricula, a list of forum participants, and a list of forum speakers, discussion leaders and facilitators. (DB)

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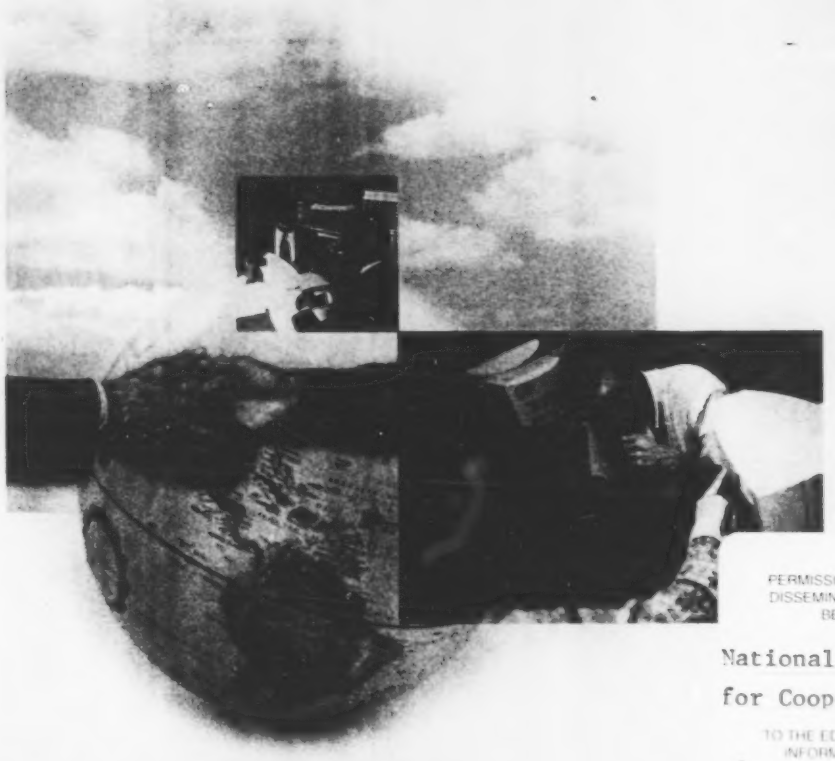
National Commission for Cooperative Education

Educating a Globally Productive Citizenry: The Role of Higher Education in the Integration of Learning and Work

A Monograph for College Leaders



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Educating a Globally Productive Citizenry: The Role of Higher Education in the Integration of Learning and Work

A Monograph for College Leaders

MODELS, RECOMMENDATIONS, AND NEXT STEPS FROM
The Executive Forum for Higher Education and Business Leaders:
Partners in Integrating Learning and Work for 21st Century Graduates

Published by
National Commission for Cooperative Education

Report prepared by Polly Hutcheson

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The National Commission for Cooperative Education is a private, not-for-profit organization dedicated to advancing cooperative education on behalf of postsecondary institutions, employers and students. NCCE encourages the development of quality cooperative education programs through research, public awareness, educational programs and national advocacy. The Board of Trustees is composed of college presidents, industry executives and representatives from labor, national organizations and government. NCCE promotes equal opportunity in its policies, programs and employment practices.

Paul J. Stonely — President, NCCE
James E.A. John — President, Kettering University
Chair, NCCE Board of Trustees

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We were pleased to have eight national organizations join as co-sponsors:

- *American Council on Education*
- *American Association of Community Colleges*
- *Business-Higher Education Forum*
- *Education Commission of the States*
- *National Alliance of Business*
- *National Association of State Universities and Land-Grant Colleges*
- *National Employer Leadership Council*
- *State Higher Education Executive Officers*

Finally, we salute the most important contributors to this report—the 150 education, business, government and national organization leaders who participated in the Forum and developed the comprehensive recommendations that follow.

Polly Hutcheson
Vice President, NCCE
Project Director
January 1999

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Executive Summary

WHAT—Increase the Integration of Learning and Work in Higher Education

The National Executive Forum explored the integration of learning and work in postsecondary curricula. Education, industry and government leaders agreed on its importance for the education of a globally productive citizenry. What makes it so relevant and timely is the confluence of learning theory research, state education reform, and School-to-Work initiatives that emphasize contextual learning, combined with the movement to identify skills needed for success in the multiple careers that most graduates will experience. This report includes a concise summary of recommendations organized by college, employer or government (p. 18) and a chart of the goals, challenges, recommendations and actions plans (p. 20). Contact NCCE for other Forum-related publications: Resource List on Integrating Learning and Work: The Postsecondary Role and Cooperative Education: Institutional Profiles of Integrated Learning.

WHY—Education Reform Needs Postsecondary Partners, and Higher Education Can Derive Key Benefits from Partnerships with K-12 and Industry

Higher education is an essential partner if we are to:

- **Build clear transitions** for high school students currently engaged in contextual learning
- **Enhance academic curricula** based on learning theory
- **Ensure skilled graduates** who are prepared for career success
- **Prepare K-16 teachers** in applied learning pedagogy
- **Offer continuing education** for adults entering or returning to higher education

HOW—What Steps Will Lead to an Enhanced Postsecondary Role?

If we are to truly effect change and promote the integration of learning and work in higher education, Forum participants believe we must move beyond rhetoric to real action in the following areas:

- **Build a lifelong system of integrating learning and work** by articulating and providing support for a pre-kindergarten-through-life system of education that incorporates the integration of learning and work. We need clarity on the rationale, desired skills, necessary resources, incentives for key partners, and an action plan to accomplish this.
- **Disseminate data, models and "best practices"** to furnish the outcomes data that are essential for convincing key partners, as well as the methods for carrying out this kind of change. Both data and models must address goals valued by higher education.
- **Enhance student learning through academically-approved work experiences.** This is grounded in research showing that most students absorb information best when learning-by-doing. Learning through work experience unites employers and faculty in the education of tomorrow's workforce, promoting both critical thinking and SCANS skills.
- **Develop faculty support for the integration of learning and work.** Faculty members are key to the process of education, and an emphasis on learning outcomes will help to attract their support. Recruitment and performance criteria for faculty should reflect this value.
- **Foster institutional change to incorporate contextual learning strategies.** Recognizing the difficulty of change in higher education, participants explored techniques for institutionalizing the integration of learning and work in colleges and universities.
- **Build strong local partnerships to support sustainable, effective learning systems.** The goal of a comprehensive system of learning can only be achieved by uniting K-12 systems, postsecondary institutions, business, community groups and government in a collaborative effort where each of the partners realizes benefits.

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Glossary

The following strategies, programs or terminology appear in the monograph

Applied or Contextual Learning—A learning strategy emphasizing the context within which a student might apply the skills or knowledge derived from the instruction. It addresses multiple learning styles among students and is based in learning theory indicating the impact of learning-by-doing. Many states are incorporating applied and contextual learning into their recent K-12 or K-16 education reforms.

Cooperative Education (Postsecondary Level) or "Co-op"—An educational strategy integrating classroom studies with learning through paid, productive work experiences related to a student's academic or career goals. Co-op is offered at the associate, baccalaureate, and graduate levels, and is available in a wide range of fields of study. Federal seed money was available under Title VIII of the Higher Education Act until 1996.

SCANS (Secretary's Commission on Achieving Necessary Skills)—skills identified as necessary for success in a high-performance economy. These include workplace competencies (resources, interpersonal skills, information, understanding of systems, and technology) and foundation skills (basic skills, thinking skills, and personal qualities). SCANS is being used by a number of educators as well as employers in identifying a common language of learning outcomes.

School-to-Work (STW) or School-to-Career (STC)—A system of education promoting contextual learning for all students, incorporating school-based learning, work-based learning, and connecting activities. It is based on local partnerships of secondary, postsecondary, business, community groups and government. In many states, the name has shifted to School-to-Career to reflect the lifelong learning and growing postsecondary involvement. The National School-to-Work Opportunities Act was passed in 1994, and provides seed money to states for local implementation initiatives.

Standards-Based Reform—State education reform initiatives that include state determined, challenging academic standards (specifying what students should know and be able to do) and alignment of testing, accountability, teacher certification, etc. with standards. In many cases, this reform includes an emphasis on contextual and applied learning.

Skill Standards—National and state initiatives to identify the skills or knowledge needed in a career or industry field. In many cases, educators and industry representatives are working together to identify curricula that promote the acquisition of those skills.

Tech Prep—An educational strategy combining applied academics and vocational education typically encompassing the last two years in high school and two years of postsecondary education. It is designed to provide technical curricula in high school to develop broad skills for either a career or matriculation in a community college technical career program. Tech Prep has had specific federal funding since the 1990 Reauthorization of the Carl D. Perkins Vocational and Applied Technology Education Act.

Work-Based or Work-Integrated Learning (WIL)—An educational approach that integrates learning at school-approved work positions with learning in the classroom. The term "work-integrated learning" is used by many higher education institutions to emphasize the academic nature of the learning at the worksite.

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INTRODUCTION
A New Perspective

As college and university leaders, we have often viewed K-12 education reform and workforce preparation initiatives as either separate from or peripheral to the missions of our institutions. We tend to distinguish between national concerns about adequate education for economic competitiveness and the generally high regard for postsecondary education.

However, there is a vital role for higher education, and it is directly related to our central mission of educating an effective citizenry of critical thinkers who are able to apply their analytic and problem-solving skills. Pursuing this role presents both opportunities and challenges.

There is a vital role for higher education, and it is directly related to our central mission of educating an effective citizenry of critical thinkers able to apply their analytic and problem-solving skills.

Colleges and universities have a compelling rationale for coordinating with current K-12 education reform, workforce preparation, and work-based learning initiatives. This will allow them to: 1) assume a proactive role in building a coordinated path of learning from K-12 to postsecondary to lifelong learning, and 2) ensure that postsecondary education offers the most appropriate learning curricula to prepare all of its students for success in education, in careers, and in productive citizenry.

The Executive Forum for Higher Education and Business Leaders held in May, 1998 in Washington, DC attracted executives from colleges and universities, business and government to discuss industry-education partnerships that integrate learning and work in postsecondary curricula. The Forum was presented by the National Commission for Cooperative Education, the National School-to-Work Opportunities Office, and the U.S. Departments of Education and Labor. Eight national education and business organizations joined as co-sponsors.

Federal funding for the event was provided to explore effective ways for higher education to be a more active partner with private and public sector employers in the development of a comprehensive, coordinated system of education that prepares all students for the competitive workplace of the twenty-first century.

In addition, college and industry leaders developed recommendations for future federal, state, and institutional investments to address these goals. In looking at models within higher education, the Forum focused primarily on cooperative education, or "co-op," due to its long history as a college-industry partnership based on structured academic curriculum integrating learning and work.

Key Topics

- ❑ **Why Higher Education is a Critical Partner**
- ❑ **Benefits for Colleges and Universities**
- ❑ **Forum Findings and Recommendations**
- ❑ **Cooperative Education – A Model Postsecondary Strategy for Integrating Learning and Work**

The primary areas of interest identified early in the forum centered on three requests:
Promote system-building to articulate and encourage a PK-Life system of work-integrated learning;
Provide strategies to start and expand curricula that can build that kind of system; and
Improve communication and information to link diverse, related strategies

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Why Higher Education

Aren't state education reform and initiatives such as School-to-Work really just designed for K-12

Many higher education leaders and policymakers initially questioned their need to be actively involved in the education reform efforts to improve the K-12 preparation of students, and in the accompanying emphasis on applied learning and outcomes-based performance. After all, the higher education system in this country has been internationally acclaimed as exemplary. On the other hand, colleges and universities have long accepted relevant work experience as an integral part of the curricula in specific fields such as medicine and teacher training. There are important reasons why colleges and universities should expand this involvement.

- ❑ **To build a clear transitional path for students from secondary school to colleges and universities.**
- ❑ **To use current research on learning to enhance academic curricula with the integration of learning and work.**
- ❑ **To ensure that postsecondary students graduate with the skills needed for career success.**
- ❑ **To prepare teachers for instruction in applied learning pedagogy.**
- ❑ **To offer further education for adults entering or re-entering postsecondary education.**

This involvement will also assist colleges in meeting the increased demands for accountability, assessment and measures of effectiveness. As the public and policymakers increasingly ask questions about the outcomes and value of higher education, structured work-integrated learning curricula provide direct linkages and measurable skills and outcomes. This report includes examples of higher education's commitments to work-integrated learning curricula, college admissions policy incorporating competency-based measures, and industry partnerships to enhance the education of students.

> *"Commitment to professional work experience for all our students is a major component of the Long Island University Plan, which distinguishes our undergraduate program from the abundant other colleges on Long Island and the New York metropolitan region."*
>
> Dr. David J. Steinberg, President
> Long Island University
> Institutional Profiles of Integrated Learning

Benefits for Colleges and Universities

As a college leader, why should I be particularly attracted to applied learning curricula like cooperative education?

Postsecondary education prepares students to become effective, insightful and productive members of society. Educational strategies that increase student interest, analytical ability and comprehension assist us in accomplishing goals inherent in higher education. And, these strategies prepare graduates for success in the rapidly changing workplace of the twenty-first century. College and university presidents at the Forum cited several key benefits in offering structured work-integrated learning:

- **Providing an Edge in Recruitment of Students** According to an American Council on Education survey, 75% of colleges reported that their students were more career-oriented than before, and 47% said their graduates had more trouble obtaining good jobs in their field. Students and parents are increasingly asking questions about the career or employment outcomes of colleges. Institutional studies have shown that cooperative education is a recruitment factor for colleges with visible and active programs.

"Commitment to professional work experience for all our students is a major component of the Long Island University Plan, which distinguishes our undergraduate program from the abundant other colleges on Long Island and the New York metropolitan region."

Dr. David J. Steinberg, President
Long Island University
Institutional Profiles of Integrated Learning

- **Aiding Retention** A number of institutional surveys demonstrate higher retention rates for students who participate in work-integrated learning. Broader studies on the factors that impede college retention have identified areas that structured work-integrated learning addresses—lack of money, lack of direction or career goal, and feeling of separation or alienation from college. Students in co-op and work-integrated learning interact with program directors or coordinators throughout their time at college, benefiting from this ongoing link between the institution and paid work experience in students' intended career fields.
- **Enhancing the Curricula** Classroom courses come alive with practical applications and access to state-of-the-art equipment through work experience. Recent research in learning indicates the effectiveness for all fields of study, including those in the traditional core curriculum.
- **Building Partnerships with Industry** Corporations that see tangible human resource benefits from their interaction with colleges have a special impetus to enhance that partnership. Their financial support and insight into the skills needed for workplace success assist in building stronger curricula.

Forum Findings and Recommendations

As we identify the challenges and opportunities, what are the essential next steps that will move us forward?

- **Articulate and support a PK-through-Life system of integrating learning and work.**
- **Disseminate data, models and "best practices."**
- **Enhance student learning through academically-approved work experiences.**
- **Develop faculty support for the integration of learning and work.**
- **Foster institutional change to incorporate contextual learning strategies.**
- **Build strong local partnerships to support sustainable, effective learning systems.**

Voices from the Field: Regional Focus Groups

Regional focus groups and dialogues were conducted among college faculty, employers, students, and cooperative education administrators—from both two-year and four-year institutions. Observations reflect both opportunities and challenges to integrating learning and work in higher education, developing strategies to increase postsecondary participation in School-to-Work (STW), and identifying the steps college and industry leaders should consider.

- Most students with postsecondary work-integrated learning experience are "work-ready" upon graduation while other students are often unable to describe what they know and can do, struggle with career decisions, and have a difficult transition from classroom to workplace.
- Colleges and universities that have seen enhanced student learning, recruitment, and retention benefits from work-integrated learning are encouraging the expansion of this educational strategy.
- Student and faculty awareness of work-integrated learning is often low, even on some campuses that strongly support it.
- Students graduating from K-12 School-to-Work systems will have much clearer expectations about what they want a postsecondary education to do for them and will expect colleges and universities to build on their secondary school work-integrated learning experiences.
- More educators and employers are seeing the connection between education reform efforts, the move toward performance standards, and initiatives to integrate learning and work. Many would like to explore the implications of these movements for curricular change in higher education.
- Business people and educators use different language and often mistake each other's goals. (Educators frequently think employers want narrow, job-specific training, when they really want self-directed, creative problem solvers and team players who communicate clearly and think systemically. Many employers view educators as eager for financial support, but unwilling to have anyone outside academia influence their curricula. In fact, many educators welcome input from the employing community.)
- Colleges provide few incentives for faculty participation in work-integrated learning. Because it is not part of the rank-and-tenure system on most campuses, it is not highly valued by academe.
- Educators carry misunderstandings and stereotypes about both STW and work-integrated learning. Some fear "creeping vocationalism," regarded as antithetical to the mission of a liberal arts curriculum. Many have an "either/or" view that intellectual pursuits and applied learning should remain separate.
- Current organizational structures in higher education (e.g. teaching loads, credit requirements, and funding streams) often impede the expansion or integration of work-integrated learning opportunities.
- Some employers now hire only graduates with work-integrated learning experiences, due to time and money savings and higher employee retention. These employers build close relationships with colleges.
- Other employers still do not understand the potential of work-integrated learning and worry about the process or possible hassles of employing students and revising management, labor or personnel policies.
- Employers and educators should examine their perceptions about work-integrated learning, and challenge their assumptions about how and where people learn. Employers participating in work-integrated learning should not be just "people who hire students for part-time work," but major players in the total learning process.
- Colleges with a strong emphasis on the integration of learning and work (as reflected in their mission statements, work experience requirements, and philosophical support from faculty) are best able to institutionalize this academic strategy. Research and data on the learning outcomes of co-op and similar strategies will help expand support.

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RECOMMENDATION 1

Articulate and support a PK-through-Life system of integrating work and learning

The Forum was convened to explore and promote the role of higher education in a comprehensive system of education that integrates learning and work. This encompasses both the curricula offered within higher education and the connections between higher education and other levels of schooling. Initiatives such as School-to-Work and state education reform highlight the value of active, applied learning. Postsecondary curricula such as cooperative education have a long history of successfully integrating classroom study with related work experience.

However, despite pockets of success and system-building, a comprehensive vision of this educational philosophy that would encompass all students has not been broadly accepted by the public or key decisionmakers—particularly those within higher education. Challenges include the perception that School-to-Career strategies are not designed for the traditionally college-bound student, as well as the different needs that complicate building an education continuum that includes both youth and adult students.

College and industry leaders identified a number of strategies to build a more widely-perceived vision of education for learning and career success.

Additionally, state requirements such as time-to-graduation and the definition of Full-Time Equivalencies can impede this shift to an educational approach that incorporates more applied and contextual learning. Significant, academically-related work experience may extend the time in college and definitions of full-time student status do not always accommodate students engaged in work-integrated learning.

College and industry leaders identified a number of strategies to build a more widely-perceived vision of education for learning and career success. Educators and policymakers need to articulate a compelling case for change that clarifies the vision, desired skills, necessary resources, incentives for key partners, and an action plan to accomplish this. This would include state and institutional plans for successful transitions throughout the educational process—from pre-kindergarten through entrance to the workplace, as well as for adults reentering postsecondary education or training. As an example, Forum participants heard about the Georgia Partnership for Excellence in Education, which identifies local needs and issues and develops local solutions through partnerships of schools, colleges, business and community organizations.

Forum participants also encouraged more state integration of standards-driven education reform and curricula that integrates learning and work. These initiatives focus more on the competencies developed than the traditional measures of time in the classroom and grade point average. The emphasis on contextual or applied learning—learning presented in a context in which it might be used—and the use of skills assessment have demonstrated some impressive success.

However, the broad range of partners in the education process (particularly higher education) have not been actively involved in either delivering this curricula or easing the transitions for students who have previously enjoyed these strategies. Colleges should be offering this pedagogy to their students. One way to encourage this would be to adjust the accreditation standards for colleges and universities to include work-integrated learning. This would serve students through increased availability of these curricula and would assist in addressing the emphasis on assessment.

Finally, many government and education leaders at the Forum cited the need to consider the status of state efforts to implement Welfare-to-Work and the resulting limitations on postsecondary options.

System-Building Next Steps

- ❑ **Convene key government, education and industry leaders to develop an articulated vision. Ensure that postsecondary education is involved in the discussion.**
- ❑ **Raise the national profile by having influential policymakers and business executives articulate the need and cite exemplary models.**
- ❑ **Fund best practices and include postsecondary in those partnerships as STW legislation sunsets.**
- ❑ **Encourage accreditation standards that include the use and assessment of students' work-integrated learning.**
- ❑ **Explore the needs of adult and underachieving students and devise remedies (e.g. childcare, tutoring, etc.)**
- ❑ **Ensure education and employment legislation does not inadvertently impede participation.**
- ❑ **Reverse the trend towards short-term skill attainment versus postsecondary education in the implementation of Welfare-to-Work.**

National Organizations Support the Integration of Learning and Work

—excerpts from recent action statements by national higher education and business organizations

- ❑ ***Sponsor career development activities on campus for both students who are about to enter the work force and those who are just beginning their college careers.***
- ❑ ***Develop and sustain cooperative education and work experiences for students.***
- ❑ ***Design new courses that integrate virtual work experiences into the students' academic experience.***
- ❑ ***Identify specific abilities and skills that are needed in business, particularly those that might be developed by revising college curricula.***
- ❑ ***Ask business leaders to serve on accreditation and academic advisory committees.***

Spanning the Chasm between Business and Higher Education: 26 Easy Ways to Promote Cooperation
Business-Higher Education Forum (affiliate of American Council on Education and National Alliance of Business)

- ❑ ***Create a vision of postsecondary education in workforce development***
- ❑ ***Connect learning and work***

An Agenda for State Higher Education Boards, Postsecondary Education and the New Workforce
State Higher Education Executive Officers

- ❑ ***Engage in ongoing dialogue with K-12 about the roles of schools and postsecondary in teaching essential work-place skills***
- ❑ ***Work with employers to identify ways to smooth the transition from postsecondary education to work***

What the Higher Education Community Can Do, School Reforms & Higher Education: A Call for Collaboration
National Governors Association

- ❑ ***We will strengthen the link between education and career by encouraging business-academic partnerships to examine and restructure curriculum, incorporating new instructional techniques in the classroom, providing for continuing career and professional development, and insuring that our students continue to receive superior technical and professional assistance in developing the skills and competencies employers value—capacities to work in teams, solve problems, communicate clearly, and exercise ethical leadership.***

Returning to Our Roots: The Student Experience
Kellogg Commission on the Future of State Universities and Land-Grant Colleges

RECOMMENDATION 2

Disseminate data, models and "best practices"

In order to build support for the role of higher education in producing this globally productive citizenry, key decisionmakers in education, business and government must have a broader awareness of the goals, implementation strategies, and measures of effectiveness of such strategies. Both higher education and industry leaders have indicated that they are unfamiliar with many of the successful models that are often highlighted by specialists in the integration of learning and work. In addition, even among those who administer programs, there is often little awareness of other models.

Although we are proposing a system of education, there is limited interaction among the various work-integrated learning programs. These include Cooperative Education, Tech Prep, School-to-Career, Youth Apprenticeship, Internships, Practicums, Career Academies, and others. The Executive Forum particularly focused on cooperative education as a longstanding post-secondary model for both the baccalaureate and associate levels.

In addition, there is an increasing demand for data on the outcomes or effectiveness of these programs. Evidence of the impact on recruitment, retention, learning, and post-graduate employment of students will capture the attention of more college and university leaders. Similarly, students, parents, educators and policymakers will not broadly support secondary education programs that they believe in any way limit postsecondary or employment options.

We must have assessment of success in measures that have wide respect (e.g. broad participation rates, employer support, enrollment in college, persistence to graduation, post-graduate employment offers in good jobs related to students' fields of study, adoption by prestigious educational institutions, and assistance in the affordability of college through paid work experience). These outcomes are persuasive and those who make federal, state and local education decisions increasingly call for them.

- ❑ **Fund and/or encourage collection of data and models at the state and federal levels.** This should be on the research agenda for all the partners in these programs—school systems, colleges, industry, and local, state and federal policymakers.
- ❑ **Disseminate data and models to local and regional partnerships,** and to education and industry representatives. In addition, prominently convey this information to the public.

School-to-College-to-Careers

Early data from the National School-to-Work Opportunities Office indicates that, contrary to the view of many in higher education, a large percentage of those students are going into postsecondary education.

- ❑ **Students in a Boston School-to-Career program were 16% more likely than the high school average to go to college the year after graduating. For African American STC students, the rate was 28% higher.**
- ❑ **96% of students and recent graduates of the Wisconsin STC program indicate they intend to pursue postsecondary education.**
- ❑ **STC students in Philadelphia have a higher GPA, are less than one-third as likely to drop-out, and are 12% more likely to graduate from high school when compared to all students in the district.**

MAXIMIZING SCALE AND LEARNING

Strengthening the integration process—Northeastern University

Even for colleges at the forefront of work-based learning, adapting to the changing environment calls for periodic adjustments. A critical question is how to ensure that students are integrating classroom studies with the structured, college-approved work experiences. How do we help students connect the different forms of learning? At Northeastern University—which has several professional colleges, a college of arts and sciences, and the largest college co-op program in the United States—enhancing the educational value of co-op is a primary objective of an ongoing effort to integrate theoretical and professional learning, and classroom studies and workplace experience. In the Northeastern model—called "practice-oriented education"—students will find opportunities to combine coursework in a professional field with coursework in the arts and sciences in ways that reveal and enhance the connections between the two. Professors in both liberal arts and professional courses will draw on their students' on-the-job experiences during classroom instruction. And students will have opportunities to reflect explicitly on what their co-op placements have taught them about the subjects they are studying.

Overview: Annual Participation

Students on co-op	5800	Paid Positions	99%
Employers	1851	Average salary per quarter	$5,135

Key Components:

At Northeastern University, cooperative education is mandatory in every college except Arts and Sciences. The co-op department includes 50 co-op faculty coordinators. Co-op began at NU in 1909, and is a vital, distinguishing feature of the institution. Beginning in their sophomore year, students alternate terms of full-time study with terms of full-time employment at a college-approved co-op work experience. At the end of the five-year program, students graduate with a degree and two years of relevant work experience.

The co-op faculty utilizes a Cooperative Education Learning Model that outlines experiential learning credit through the completion of the preparation, activity, and reflection components. Northeastern's institutional plan calls for a systematic integration of liberal arts, professional and co-op learning through:

- ❑ Multiple options for structured study that integrate the arts and sciences and the professional fields
- ❑ An educational mission statement for co-op developed by each academic department
- ❑ Identified learning outcomes and measures of co-op
- ❑ Increased collaboration between teaching and co-op faculty through team teaching and the integration of co-op faculty into policy and process within academic departments
- ❑ Exploration of how to include support of co-op learning in the evaluation of co-op and teaching faculty
- ❑ Assessment of student and employer experience with the co-op process
- ❑ Reexamination of the quantity and length of co-op, how co-op relates to other models of integration of learning and work, and whether students should be awarded academic credit for their co-op experiences

Capstone Projects Link Campus and Worksite Learning

Kettering University in Flint, MI evolved from an institute with strong connections to General Motors Corporation into a university with students working on co-op with more than 700 employers. Beginning with their admissions process, students are linked with employers and commence alternating terms of learning on campus with terms of learning at the worksite.

The capstone project is a required, masters-style thesis based at the worksite. In the fifth year, the student spends two terms completing a work-related project overseen by the faculty advisor and employing supervisor. The thesis is graded by faculty, and the process provides an opportunity for both students and faculty members to relate academic curricula to applied projects in global industries.

"If we look at the research on learning, it is very clear that people who learn through application and who have a variety of ways of learning are more likely to retain and be able to use what they know. Research tells us that people who can apply what they know are operating at a higher level than people who merely know. The question is why is it so difficult to take the research and translate that into the classrooms at our colleges and universities?"

Dr. Cal Crow
Center for Learning Connections

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RECOMMENDATION 3

Enhance student learning through academically-approved work experiences

Data and models of success are helpful and can be an impetus for other colleges and employers. However, the primary concern for most educators is the effect on student learning. How is it enhanced through this linkage of school-approved work experience to academic classroom study? What are key elements that will foster effective learning, and how do we expand participation?

Even institutions that offer related work experience as part of the curricula do not always have strong connections between classroom learning and approved work experience. Teaching faculty may resist incorporating work experience into the classrooms, and worksite supervisors may not understand learning requirements. This leaves the connections to students to decipher on their own, and many either don't know or don't understand the value of work-integrated learning.

The primary concern for most educators is the effect on student learning. How is it enhanced through this linkage of college-approved work experience to academic classroom study?

Industry and university executives identified strategies to strengthen the learning aspect. We need to identify the skills and knowledge that should be learned, as well as the mechanisms to facilitate that (such as learning agreements, papers, reports, journals, portfolios, etc.). Colleges and universities should encourage cross-curricular integration and assign students to major-related faculty for oversight of the learning. Employers can be highly effective in helping to identify necessary skills and in providing a business view of the effectiveness of the college's curricula. Documenting and assessing applied learning will enable both educators and employers to evaluate effectiveness and build broader support. Finally, Distance Learning and the Internet offer new ways to continue the education process for students at worksites far away from the campus.

- ❑ **Establish criteria and structural elements to assess student learning.**
- ❑ **Require academically-connected applied learning experiences.**
- ❑ **Encourage mentoring to convey career/life success skills.**
- ❑ **Consider tuition assistance for students successfully completing work-integrated learning.**
- ❑ **Establish a tax waiver for part or all of student wages earned in these work experiences.**
- ❑ **Increase the amount of these wages that are exempt in the student financial aid formula.**
- ❑ **Consider requiring an "applied baccalaureate degree," and not just for the professional schools.**

"Universities need to understand that they are a nexus—a place of linkage, not a place of isolation. The way that their graduates emerge into the world is a fundamentally central element of assessment of that institution's performance. As Ernest Boyer indicated, anyone who has not experienced work as part of an education can not be considered to be liberally educated."

Dr. James W. Hall
Chancellor, Antioch University

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WHAT ABOUT LIBERAL ARTS STUDENTS?

We understand the value for engineering, business and technical fields, but what about students in the liberal arts? – American University

The Forum included a presentation on the program at Antioch College, a liberal arts college with a mandatory co-op program since 1921. American University in Washington, DC offers another example in structured integration of learning and work in the non-technical fields. The cooperative education program was established in 1974, and greatly expanded with federal grants under the Higher Education Act. Their program differs from the traditional engineering model of co-op in that most students co-op later in their academic program, work in part-time positions while also attending classes, and are less sure of their intended career field.

Overview: Annual Participation

Students on co-op	500	Part-time positions	75%
Students using Co-op Services	1000	Paid Positions	63%
Employers	360	Average salary per term	$4,773

Key Components:

Students earn academic credit (a minimum of 3 credit hours), awarded by teaching faculty. The academic department assigns a Co-op Faculty Advisor for students, with a typical faculty load of up to 15 students. The grade is based on structured academic assignments, attendance at a co-op seminar, and the employer evaluation. The academic assignments focus on integrating the student's awareness and understanding of the learning taking place at the worksite. Elements include self-assessment of skills, critical reflection on individual and organization roles and productivity, and practical exploration of how students can contribute substantively to the organization through academically-inspired projects.

Measures of Success

While the university also offers internships, the co-op program is more structured and includes career exploration and counseling. A survey comparison of intern and co-op graduates found significant added-value for co-ops in the areas of salary level, assistance with the career search for the first job, securing a position in the student's field, and perception of support from the university.

Addressing the Still-Deciding Student

Drexel University in Philadelphia has a long history in cooperative education. In recent years, they began aggressively marketing the advantages of co-op to students who have not yet identified a career path—their so-called Still-deciding Student™. This includes a large number of current or future liberal arts undergraduates. In addition, they have trademarked the term "Ultimate Internship™" to convey the advantages of cooperative education in terminology more familiar to the typical student entering college.

Their freshmen enrollments doubled, and applications increased by an even larger percentage. They developed an effective way to promote the enhanced learning, career development and post-graduation employment benefits to a broader range of students.

" In our college, there is a confidence in both the liberal arts and professional areas that this is a learning paradigm that can be accepted by the university. All members of the co-op department are members of the instructional faculty with all the rights, privileges, rank, and everything else. Co-op is offered for academic credit, so that from the beginning we had to deal with what is learned, how is it learned, and how is it evaluated."

Dr. Harry Heinemann
LaGuardia Community College
City University of New York

RECOMMENDATION 4

Develop faculty support for the integration of learning and work

At the heart of every college or university, the faculty represents one of the strongest forces for delivery of the mission of the institution. The problem for the goals of the Forum and for many effective work-integrated learning programs is that faculty philosophy, reward structures and workload typically do not value work-integrated learning.

Faculty members often perceive an "either-or" chasm between academics and work-integrated learning. The latter is frequently viewed as "vocational" instead of "academic." In reality, postsecondary curricula such as cooperative education originated as pedagogy to ensure that students received the most comprehensive, effective and high academic learning to prepare them for their future careers. This was seen as equally vital for top academic performers as for other students.

The question of academic value is not only reflected in the view of some faculty members, it is reinforced by institutional policies that typically do not select, promote or evaluate professors on the basis of their support of work-integrated learning. Similarly, those who coordinate work-integrated learning—whether they hold faculty status or not—often are perceived as administrative rather than academic personnel. Programs are most readily accepted when run by a current or former member of the teaching faculty, even though coordinators with other credentials may have strong skills in both academic and career advising.

Forum participants focused on strategies to encourage and reward faculty support. Colleges need to re-examine and revise faculty reward structures. In light of contractual difficulties, they might choose to focus first on new faculty hires. As mentioned before, data concerning outcomes—particularly those related to the impact on student learning—are persuasive.

Coordinators of work-integrated learning should be as respected on campus as teaching faculty. Forum participants noted that coordinators at a number of effective colleges and universities do, indeed, hold faculty rank.

As an essential element of work-integrated learning, employers have an important role, even when considering faculty support. There are effective models where industry provides faculty externships (short-term experiences in the workplace for faculty members). In addition, in postsecondary programs closely linked to industry, faculty members often have significant experience working in industry before becoming educators.

- ❑ **Fund incentives for changes in faculty reward and evaluation systems. This could be done at the institutional, state or federal levels.**
- ❑ **Encourage changes through accrediting bodies and changes in standards.**
- ❑ **Fund externships and other industry experience for faculty. This could be provided by institutions, industry or government.**
- ❑ **Target new faculty by establishing hiring and reward criteria to encourage support and participation in work-integrated learning.**
- ❑ **Elevate the hiring criteria, respect and reward system for cooperative education and work-integrated learning coordinators, directors and faculty.**

INSTITUTIONAL CHANGE: ADOPTING COMPETENCY AND FIELD-BASED CURRICULUM AT AN ELITE COLLEGE –Babson College

Babson College is consistently rated as one of the top business colleges in the country. With an appreciation of their prime position as well as an eye towards the challenges of the future, they are transforming the undergraduate curriculum. And, they have effective faculty support and participation in the process. Their changes are based on the belief that the college does not train students for one specific career, but provides an integrated educational background enabling graduates to succeed at many levels.

Key Components

Babson has adopted a competency-based, field-based curriculum, stressing student responsibility and learning-by-doing. The curriculum emphasizes rigor in critical thinking skills and a multi-disciplinary view. Elements include learning, assessment and reflection. Characteristics include:

Competency-based. Faculty identified 27 core competencies in four key areas. Students will be able to:

- ❑ Formulate, explore, reflect and communicate on historical, cultural and contemporary issues in a world of diverse cultures and ways of knowing
- ❑ Be analytic, creative and communicative about complex personal, social and professional issues
- ❑ Be prepared and willing to be responsible members of society and committed to continued development
- ❑ Bring a high-level of business expertise to the workplace and be able to initiate, implement and manage change

Early assessment of entering students—through a required assessment of math, technology/computers, and writing skills administered by the college or a trained alumnus/a. Results do not affect admissions, but do assist in identifying strengths or weaknesses to be addressed.

Three Developmental Levels

- ❑ **Foundation Program** encompassing the first two semesters. It includes a) a Foundation Management Experience promoting learning-by-doing through team development and management of a for-profit business funded by the college. Profits are used to support charitable projects coordinated by the students; b) Portfolio Self-Reflection; c) First Year Experience curriculum covering an introduction to competencies, negotiating academic and student life, leadership and self-understanding, and introduction to the world of work; and d) the Babson External Assessment Program conducted by a trained business representative.
- ❑ **Intermediate Program** for semester three through five. This includes a) an Intermediate Management Core integrating all required business courses through a team-taught curriculum; b) intermediate liberal arts, history and social science electives; c) applied quantitative modeling; and a Portfolio Learning Plan clarifying skills and goals through the development of an individual learning plan that charts the student's academic courses and plans for the first career experience after college.
- ❑ **Advanced Program** for semesters six through eight. At this level, students execute their learning plans through coursework, competency development, field-based study and co-curricular activities.

Contributing Factors

Institutional change in higher education is difficult to achieve. Factors assisting Babson include:

- ❑ The impetus came from internal goals for long-term success, combined with student, faculty and employer evaluations identifying areas for improvement. The change began with curriculum in the MBA program, based on preserving and enhancing their market niche among ample other MBA programs in the region.
- ❑ Faculty involvement and approval was an integral part of the process. The college already had a smaller, legitimized decision-making body to initiate and promote the design.
- ❑ Business and liberal arts faculty perceive themselves to be part of a single faculty. The curriculum combines both the assessment emphasized by the business faculty and the reflection valued by the liberal arts faculty.
- ❑ The institution modified the tenure and promotion process to include rewards for participation in applied research. *Guideprof* helps faculty members set individual plans for teaching, intellectual vitality and community service. It tracks time and effort in research and service as well as teaching hours.

RECOMMENDATION 5

Foster institutional change to incorporate contextual learning strategies

As just noted, the philosophy, perceived mission and funding patterns of most colleges do not adequately support cooperative education or work-integrated learning. Awareness, support and visibility are limited. Building and maintaining effective programs—integrating the curriculum and ensuring quality worksites and career counseling—are expensive. Institutions with significant experience with these educational strategies support the cost, just as they fund other integral parts of the curricula. However, college leaders without the direct experience of the benefits for students and institutions are reluctant to make that commitment. In addition, expanding the offerings to all departments and all students can be more complicated and expensive.

As higher education institutions consider expanded roles in light of continuing education for adult learners and new developments in distance learning, they see private sector competitors in education and training. Proprietary entities and corporations have developed programs to meet the needs identified by business. However, if higher education institutions so choose, they have the position, acceptance and expertise to excel in these areas.

In identifying strategies, a key first step is to examine the mission statement and strategic plans of the institution. Do they incorporate the value of work-integrated learning or structured practical work experience? Several of the colleges and universities included in the *Institutional Profiles of Integrated Learning* cited these areas as indicators of strong institutional support.

Is work-integrated learning considered part of the mainstream of the institution? If not, are we willing to make that kind of commitment? It is a clear sign to internal and external audiences that we value this method of education.

Forum participants also noted that colleges have greater success when they develop strategies that best fit their own institutions. There may be significant differences among community colleges, liberal arts institutions, research universities, and professional programs. While adhering to the basic components of structured cooperative education or work-integrated learning models, colleges and universities can adapt to the particulars of their student body, surrounding labor market, and central mission.

While federal, state or industry seed money can be helpful in establishing or expanding a program, institutions must make the financial commitment—just as they do for other academic departments they consider to be integral to students' education.

To ensure longevity, the college has to establish a secure, hard-money funding base for the administration of these programs. While federal, state or industry seed money can be invaluable in establishing or expanding a program, institutions must make the financial commitment—just as they do for other academic departments they consider to be integral to students' education.

Finally, there are several factors that can provide an impetus to institutions. Students, industry and the public are all "consumers" of higher education. Their awareness of and emphasis on academic learning that is linked to the world of work can be a persuasive voice.

If government and industry truly believe that this approach is important for building a global citizenery, they need to convey that message and to identify incentives for colleges. In addition, providing data on institutional outcomes in recruitment, retention, academic learning, employment after graduation, acceptance by graduate schools, etc. will be effective indicators of the advantages institutions could realize through pursuing these strategies.

- ❑ **Have prominent national voices from government, education and industry promote the college role in admissions, teaching and curricular support of work-integrated learning.**
- ❑ **Fund data collection on the demographics and outcomes.**
- ❑ **Disseminate examples of college mission statements that include work-integrated learning.**
- ❑ **Provide models for a range of institution types.**
- ❑ **Fund demonstrations of postsecondary work-integrated learning, linked to K-12 initiatives.**
- ❑ **Develop a statement of intent to be signed by college presidents.**
- ❑ **Convene regional meetings of higher education leadership to develop local strategies.**
- ❑ **Explore changing accrediting standards to encourage work-integrated learning.**

Corporate Educators: What does a good employer program involve?

How do companies build effective partnerships to shape the education of tomorrow's graduates?

Although this publication has focused primarily on the role for colleges, employers are key partners in a system of work-integrated learning. Mead Corporation in Dayton, OH has used a structured cooperative education program for 20 years, hiring students for alternating periods of employment. Their primary motivations are the cost-effectiveness as a recruiting mechanism for graduates and the ability to attract engineering students to the paper industry. Mead manufactures and distributes paper and paper products internationally.

Overview: Annual Participation

Students 100 Partner Colleges 30 Mead Operating Divisions 16

Key Components:

Mead's commitment to a true educational partnership with the colleges from which they recruit co-op students is reflected in the structure and resources they continue to provide. The Corporate Engineering Department provides a systematic, central resource in recruiting, orienting and supporting student learning and performance. They maintain a full-time recruiting team with long experience in college relations specifically focused on co-op. More recently, they identified 20 critical skill dimensions for their workforce needs, and charted this skill development focus over the 16-18 months (four-to-six terms) co-op students work over the course of their college program. This is a critical element in the operation of their Co-op Feeder System for future human resource needs. They also survey students to evaluate their views of the relative importance and performance of: orientation, content, supervision, logistics, exposure to top management, problem resolution, communication, career counseling, permanent employment and impact of co-op on the student's learning process and career goals.

Assessment:

Through an analysis of the cost-effectiveness of employing co-op students, Mead found that co-op students were 37% more productive at the end of the first 6-month work period, needed 17% less supervision, and led to a 74% savings when hired as graduates for full-time work (as compared to graduates who had not done co-op).

"If young people graduate from universities without an understanding of the high performance workplace, business has to spend $40,000 to $45,000 to train them. Business does not want to spend that money to bring the person up to the starting level, it would rather spend the money to bring him or her from starting to world-class performance level."

Mr. John Tobin
Siemens Corporation

RECOMMENDATION 6

Build strong local partnerships to support sustainable, effective learning systems

Building a successful education system requires the participation of a variety of partners. Cooperative education and other work-integrated learning curricula are based on the joint participation of colleges and employers. An education continuum with effective transitions for students requires the collaboration of K-12 school systems, postsecondary institutions, local employers and community organizations.

In the past, there has been limited postsecondary participation in local School-to-Work partnerships, particularly by baccalaureate institutions. In many cases, both the universities and state policymakers have questioned the need for higher education participation beyond the community college level. On the other hand, higher education and business leaders are increasingly noting the need for more productive strategies to best prepare all students for career and life success. We need to move beyond the past differences in employers' and educators' perspectives on the goals and required elements for effective work-integrated learning.

Our goal and commitment should be to build long-term, mutually-beneficial partnerships between education and industry.

Currently, there are more efforts to strengthen the interaction and collaboration. Both parties recognize the benefits in building stronger educational and financial ties. College and industry executives at the Forum reviewed the Business-Higher Education Forum's study, *Spanning the Chasm: Corporate and Academic Cooperation to Improve Work-Force Preparation*. There are other recent examples of support for constructive, substantive collaboration between postsecondary institutions and private and public sector employers. Activities include this Executive Forum, recent publications and action steps by the Kellogg Commission on State Universities and Land-Grant Colleges and the State Higher Education Executive Officers, and the regional dialogues conducted by the Business-Higher Education Forum in conjunction with the American Council on Education and the National Alliance of Business.

Forum participants identified several strategies to encourage partnerships. Given the higher education focus of this event, they concentrated on the links between colleges and industry. However, many also noted the importance of enhancing the transitions from high school and the re-entry of adult workers into postsecondary education.

We need to find more effective ways to communicate employer-identified skills and translate them into effective educational curricula. Our goal and commitment should be to build long-term, mutually-beneficial partnerships between education and industry. Employers should not be focused solely on short-term hiring needs or community service, and colleges should have broader goals than securing financial support or employment of their graduates by employers. The partnership should focus on building an education system that will best serve all partners in the long run.

Students will benefit from improved orientation to the workplace and business participation in curriculum delivery. For instance, several institutions offer team teaching conducted jointly by faculty and business representatives. Similarly, the work experience needs to be authentic work where the student is both an employee and a learner.

Employers need to convey to students and parents that industry wants graduates who already have relevant work experience. At the Forum, an IBM executive cited their increasing commitment to work-integrated learning as their prime method of recruitment. With 2000-3000 colleges students participating in cooperative education at IBM, they have a body of substantively-evaluated, pre-trained, well-acclimated students with the prior,

relevant work experience they need. As more employers identify these feeder mechanisms as effective in preparing and evaluating potential employees, students will increasingly turn to the schools that can offer the best work-integrated learning curricula.

Local Partnership-Building Next Steps:

- ❑ **Include all the partners in the post-School-to-Work strategies that will emerge.**
- ❑ **Have postsecondary institutions convene regional planning for ongoing partnerships.**
- ❑ **Disseminate models of effective work-integrated learning programs that provide real benefits to each of the partners—students, educational institutions and employers.**
- ❑ **Identify successful methods for higher education to respond to employer needs.**

Community Colleges: An Entrepreneurial Role in School-to-Careers

–Holyoke Community College

Community colleges have been the most active of higher education institutions in the School-to-Career movement, but even their participation has been limited by the concentration on secondary schools as the main focus and expenditure sites of the School-to-Work initiative. Holyoke Community College built on prior success in Co-op and Tech Prep to serve on multiple STW local partnerships. HCC developed an innovative Menu of Services to offer curricular and instructional services to school districts on a fee for service basis. This allowed their continued participation without draining the college's resources.

Key Components:

As a part of the institution's participation in School-to-Career activities, Holyoke Community College:

- ❑ Offers a Menu of Services to area schools and employers for curricula and instruction. This includes:
  - How to design a career center for elementary and secondary teachers
  - Career Seminars for high school students
  - Mentor Training for employers
  - WorkKeys Service Center for employers to develop job profiles, a competency matrix identifying the SCANS-based competency areas and required ability levels.
  - DACUM (Developing a Curriculum) services to identify school- and work-based curricular components for an industry or for specific occupations
  - SCANS training for K-12 faculty in how to design and implement SCANS-based curriculum into classroom instruction
- ❑ Developed local Tech Prep consortium database, which serves as a model for the state.
- ❑ Offers career and transfer curriculum in partnership with industry, utilizing both the community college and a state university. This was a result of HCC's participation on a local STW partnership.
- ❑ Provides cooperative education placement services for students from a neighboring baccalaureate-level state college.
- ❑ Organizes faculty externships, using the resources of the co-op program (employer database and placement specialist).

Evaluation:

Although their highly entrepreneurial approach to participating in the local implementation of School-to-Career has been successful, their experience points out the difficulties in defining a role for postsecondary institutions. Community colleges are increasingly recognized as important partners, but they usually are not included in funding streams. Continued curricular, advisory and technical assistance activities are more than most institutions can absorb without a funding mechanism.

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Partnerships and Progress in Higher Education

- **Competency-Based Admissions (CBA)**
  A number of states are encouraging admissions criteria that include student competencies in addition to or in lieu of traditional Carnegie units, seat time and grade point average. These measures of skills or competencies allow assessment of students from a broad range of secondary schools. Early participants include California (Transitions Project), Colorado (emphasis on college entry-level competencies, implemented through three years of roll-out grants and teacher education initiatives), Oregon (Proficiency-based Admissions Standards System aligned with K-12 reforms linked to certificates of mastery, and including teacher education), Washington (Certificate of Mastery—voluntary by 2000 and mandatory by 2006), and Wisconsin (an operational model of CBA as a voluntary supplement to traditional criteria for the University of Wisconsin System).

- **Contextual Learning in the Liberal Arts—Spanning K-12 and Postsecondary**
  Oklahoma is using a partnership among faculty, the State Regents for Higher Education and employers to build career pathways in geography and history from elementary through postsecondary and into the workplace. They will use WorkKeys to test students and compare their skills to career profiles. The Oklahoma Alliance for Geography Education has been a framework for collaboration among K-12 teachers and the universities. This project is part of an Education Commission of the States (ECS) initiative to combine academic and career preparation.

- **Industry-Driven Collaborative**
  The National Retail Federation, Kravco Company, American Express and the Commonwealth of PA created a Retail Skills Center (including a Retail College) at the King of Prussia Mall. It offers college-level credit courses and non-credit programs to people working within the complex. The cooperative venture includes eight colleges and universities. It will allow workers and students to earn education and industry credentials through integrated classroom and workplace learning.

- **Postsecondary Institutions and Local School-to-Career Partnerships**
  The recent national evaluation cites almost 2600 postsecondary institutions involved in local STW partnerships in 1996-97. Four-year colleges or universities constitute 38%, while two-year colleges make up 44%. There are 24% more four-year institutions participating than in the previous year. 72% of all partnerships engage one or more two-year institutions, and 41% have one or more baccalaureate level college or university.

- **Teacher Education—Contextual Learning Pedagogy**
  Wisconsin is piloting an interdisciplinary, competency-based process for preparing new teachers. It is built on identified student competencies for career success, identified competencies for teachers who combine academic and workplace competencies in their classrooms, and on connecting learning and work. The competencies will eventually be expected of all education majors. This project is also part of an ECS initiative.

National Executive Forum Recommendations

Action Steps for Colleges, Employers and Government

The following recommendations include references to college cooperative education (co-op) and work-integrated learning (WIL), which are structured academic programs integrating classroom and work-based learning. Participants included teams from colleges and universities, headed by the president or vice president; similar teams from corporations and government agencies; and representatives of national organizations. Participants also referred to the linkages to School-to-Work (STW) initiatives and education reform efforts that include applied, contextual, or work-based learning.

Colleges and Universities

Institutionalize the Strategy

- ❑ **Ensure mission statement language** includes co-op or work-integrated learning (WIL).
- ❑ **Articulate the academic value** of co-op and WIL.
- ❑ **Reward and assess students**, in part, on the basis of participation in WIL and career-building skills.
- ❑ **Identify structural and procedural elements** that promote student learning, including through WIL.
- ❑ **Ensure data collection** on participation rates and outcomes of work-integrated learning programs.
- ❑ **Include participation on the student transcript.**
- ❑ **Support an Applied Baccalaureate (or Associate) Degree,** and not just in the professional schools.
- ❑ **Consider small grants or tuition loan waivers** for graduating students who successfully completed co-op or WIL.
- ❑ **Enhance the visibility on campus.**
- ❑ **Develop on-site institutes and research centers** to support the integration of work and learning and to promote college/industry partnerships.
- ❑ **Build local consortia** to support a PK-Life system of education for success in learning and careers—convene local employers, stakeholders and policymakers and articulate the postsecondary role.
- ❑ **Be a national or local voice within higher education,** promoting the integration of learning and work.

Build Faculty Support

- ❑ **Treat co-op and WIL as an academic curriculum,** emphasizing student learning.
- ❑ **Examine hiring, review, promotion and tenure criteria for faculty** to explore ways to incorporate participation in WIL.
- ❑ **Examine workload definitions, credit and time constraints** on participation in WIL.
- ❑ **Target new faculty** by establishing hiring and reward criteria that include WIL.
- ❑ **Fund faculty research** related to co-op and WIL.
- ❑ **Support faculty externships** with employers in their field.
- ❑ **Encourage and reward cross-curricular and team teaching**—to link disciplines, to link teaching faculty and WIL or co-op faculty, and to link faculty and employers.
- ❑ **Elevate the requirements and rank of directors of co-op & WIL** to convey important role.
- ❑ **Encourage faculty mentoring** of students in career-building skills.

Employers

- ❑ **Identify the skills** needed from college graduates and communicate to colleges.
- ❑ **Ensure quality work experiences** for students (real learning, authentic work, etc.)
- ❑ **Provide effective orientation and supervision** during students' work experiences.
- ❑ **Provide mentoring** to convey career/life skills.
- ❑ **Hire graduates who have completed co-op or WIL.**
- ❑ **Convey the importance of WIL to students and parents.**
- ❑ **Offer faculty externships.**
- ❑ **Support faculty research or action projects** related to your field.
- ❑ **Build partnerships with colleges and universities** that support curricular evaluation and recommendations.
- ❑ **Be a local and national voice** for the need for co-op and WIL.

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State & Federal Policymakers/Regional and National Policy Organizations

Vision & System-Building

- ❑ **Raise the local and national profile** of the integration of work and learning, and emphasize postsecondary models as part of that.
- ❑ **Articulate the rationale** for a PK-Life system that includes postsecondary.
- ❑ **Convene key political, education and industry leaders** to act on goals.
- ❑ **Encourage institutional accreditation standards** that evaluate co-op and WIL.
- ❑ **Distribute examples of state legislative language** that alleviate unintended impediments to participation (e.g. exemption of co-op from unemployment eligibility, exemption of co-op students on work terms from regular requirements for enrollment definitions, exemption from restrictions on time to graduation, etc.)
- ❑ **Provide credit in civil service exam and hiring policy** for students who engaged in co-op and WIL.

Disseminate Best Practices

- ❑ **Fund the collection and dissemination** of participation data and effective models.
- ❑ **Disseminate models for a range of institution types** (e.g. community colleges, liberal arts institutions, research universities, etc.)
- ❑ **Encourage articulation of industry needs and education outcomes** in terms that can be translated into curricula and policy.
- ❑ **Disseminate examples of mission statements and strategic plans** that incorporate WIL.

Encourage Postsecondary Institutions' Participation

- ❑ **Provide incentives or demonstration projects to promote faculty support,** participation, and evaluation.
- ❑ **Fund worksite externships for faculty.**
- ❑ **Target future investments** to support academically-connected work-integrated learning, more flexible admissions criteria, and teacher education in work-integrated learning.

Legislative Recommendations

- ❑ **Build on best practices and include postsecondary** as true partner for Post-STW strategies.
- ❑ **Exempt a portion of student earnings** through co-op & structured WIL from the student financial aid formula.
- ❑ **Provide a tax waiver for part or all of student earnings** through co-op or structured WIL.
- ❑ **Provide tax incentives for employers.**
- ❑ **Ensure that state and federal education and employment legislation don't unintentionally impede participation** (e.g. unemployment insurance, time to graduation, etc.)

"This is the right group from business, industry, education, government, and educational organizations to focus on curricular change in postsecondary education. We in the room know the challenge of change and the risk of staying the way we are. I know we will not hesitate to embrace the task ahead."

Dr. Jacquelyn Belcher
President, Georgia Perimeter College
Co-Chair, National School-to-Work Opportunities Advisory Council

"There are three broad areas of national School-to-Work investments related to postsecondary. These include enhancing teacher preparation to include contextual learning, integrating work-based learning into the curriculum in higher education, and promoting seamless transitions between secondary and postsecondary. In addition, we will be looking at the transitions between educational institutions and the workplace and at strengthening employer participation."

Ms. Vickie Schray
National School-to-Work Opportunities Office

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Discussion Summaries from National Executive Forum

Goals	Challenges	Strategies	Next Steps
Articulate and support a PK-Life system of integrating learning and work.	• Although there are pockets of success and system-building, there is not a comprehensive vision, particularly to encompass all students, PK-Life. This is critical for sustainablity after seed funding. • Many still perceive STW (& its strategies) to be K-12, and not for the college-bound. • State requirements (time to grad., FTE definition, etc.) can impede participation. • Adult & underachieving students have different needs.	• Articulate a compelling case for change, with vision, skills, resources, incentives, & action plan. • Create a vision at the state & institutional levels for successful PK-Workforce transitions. • Encourage more state integration of standards-driven education reform and work-integrated learning strategies. • Adjust college accreditation standards to include work-integrated learning.	• Convene key government, education, & industry leaders to develop an articulated vision. Ensure postsecondary involvement. • Raise the national profile by having influential policymakers and executives articulate the need and cite exemplary models. • As STW funding ends, fund best practices & include postsecondary. • Encourage accreditation standards that include the use & assessment of students' work-integrated learning. • Ensure education & employment legislation doesn't impede student participation. • Explore needs of adult & underachieving students & provide remedies (e.g. child care, tutoring, etc.) • Reverse trend towards short-term skill attainment v. postsecondary education for Welfare to Work.
Dissiminate data, models and "best practices."	• Most people in higher education are not aware of the potential or proven benefits. • There is little interaction among those offering different work-integrated learning (WIL) programs.	• Collect data on outcomes. • Provide models & best practices. • Combine and disseminate information on various strategies (e.g. Co-op, Tech Prep, STW, etc.).	• Fund and/or encourage collection of data and models at the state and the federal level. • Disseminate data and models to local and regional partnerships, and to education and industry representatives.
Enhance student learning through academically-approved work experience, and through conveying the value of WIL to students.	• Classroom learning & approved work experience often do not have strong connections. • Teaching faculty may not incorporate into classrooms & worksite supervisors may not understand learning requirements. Thus, connections are often left to students to decipher. • Many teaching faculty members are not convinced that learning that they value takes place through structured WIL strategies. • Many students either don't know or don't understand the value of WIL.	• Identify the skills and knowledge graduates should possess for career success. • Establish learning elements (e.g. learning agreement, paper, reports, journal, portfolio, etc.). • Assign students to a major-related faculty member for oversight of learning. • Document & assess work-integrated learning. • Provide distance learning or communication for students at distant worksites. • Encourage cross-curricular integration. • Link labor market data to courses. • Promote student responsibility for managing own skill development.	• Establish criteria and structural elements to assess student learning. • Require academically connected learning elements in colleges &/or in funded initiatives. • Encourage mentoring within both education and industry to convey career/life success skills. • Reward & assess students for WIL, team work & other career-building skills. • Consider tuition assistance for students successfully completing WIL. • Establish a tax waiver for part or all of student wages (state or federal). • Increase amount of earned wages through WIL that is exempt in student financial aid formula. • Consider requiring an "applied baccalaureate degree" and not just for professional schools.

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Goals	Challenges	Strategies	Next Steps
Develop faculty support for the integration of learning and work.	• Faculty workload, philosophy, & reward structure do not value work-integrated learning. They perceive an "either-or" chasm between academics and work-integrated learning (seen as vocationalism). • Co-op or WIL coordinators are perceived as (& often are) administrative rather than academic personnel. These positions often do not have high prestige, remuneration or longevity.	• Re-examine and revise faculty reward structure. • Provide fellowships, externships, peer group discussions for faculty. • Provide data to faculty on learning & education outcomes for students. • Have co-op or WIL coordinators with equivalent rank to teaching faculty	• Fund incentives for changes in faculty reward, evaluation system. • Encourage changes through accrediting bodies and standards. • Fund externships, industry experience for faculty. • Encourage cross-curricular and team teaching by discipline faculty & WIL faculty. • Encourage & fund faculty research projects related to WIL. • Target new faculty with supportive hiring & reward criteria. • Elevate criteria, respect & reward system for co-op or WIL coordinators, directors, and faculty.
Foster institutional change in higher education to support contextual learning strategies, to ease the transition for secondary students engaged in STW, and to build a teacher population prepared to instruct in STW principles.	• The philosophy, perceived mission, & funding patterns of most colleges do not support co-op & WIL. • Awareness, support & visibility of programs are limited. • Providing effective programs, integrating the curriculum and ensuring quality worksites and career counseling are expensive. • Expanding to all students is expensive & difficult. • Private sector competitors may cost less.	• Incorporate WIL or co-op into mission statement and into strategic planning. • Move WIL to mainstream of college. • Provide secure, hard money funding. • Develop strategies to fit the diverse models of colleges. • Adjust accrediting standards to support WIL elements & evaluation of outcomes. • Collect data on institutional and student outcomes in recruitment, retention, academic learning, jobs, graduate schools, etc.	• Have prominent national voices (government, education & industry) promote the college role in admissions, teaching, and curricular support of WIL. • Fund data collection on demographics and outcomes. • Disseminate examples of missions statements. • Disseminate models for a range of institution types. • Fund demonstrations of postsecondary WIL, linked to K-12. • Develop a statement of intent to be signed by college presidents. • Convene regional meetings of higher ed. leadership to develop local strategies. • Explore change in accrediting standards to encourage WIL.
Build strong local partnerships of schools, colleges and employers to support sustainable, effective learning systems.	• There has been limited postsecondary participation in local STW partnerships (especially for baccalaureate institutions). • Benefits for each partner have not been adequately documented or reported. • There is a gap between employer and educator perspectives on the goals and required elements for effective WIL. • Educators and employers are not clearly communicating about the skills students need for career success.	• Clarify employer needs & translate into curriculum. • Improve orientation to the workplace and business participation in curriculum delivery. • Ensure postsecondary is true partner. • Build long-term, mutually-beneficial partnerships between education & industry (not just short-term hiring needs or community service). • Ensure authentic work experience where student is employee & learner. • Convey employer interest in prior, relevant work experience by graduates.	• Include all partners in post-STW funding strategies. • Have postsecondary convene regional planning for ongoing partnerships. • Disseminate models of effective WIL programs that provide real benefits to each of the partners—students, educational institutions, and employers. • Identify successful methods for higher education to respond to employer needs.

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The Cooperative Education Model

Postsecondary cooperative education began in 1906 at the University of Cincinnati, and has expanded to 900 colleges and universities. Co-op was a central focus of the Forum as a premier, longstanding model of integrating learning and work in higher education. The description below identifies key elements in the co-op model—a proven postsecondary curriculum that embodies School-to-Career principles.

Postsecondary Cooperative Education

Cooperative education is a structured educational strategy integrating classroom studies with learning through productive work experiences in a field related to a student's academic or career goals. It provides progressive experiences in integrating theory and practice. Co-op is a partnership among students, educational institutions and employers, with specified responsibilities for each party. These include:

- ❑ Formal recognition by the school as an educational strategy
- ❑ A structure providing for multiple work experiences in formalized sequence with study
- ❑ Work experiences that include both an appropriate learning environment and productive work
- ❑ Work experiences that are related to career or academic goals
- ❑ Pre-employment preparation for students, as well as ongoing advising
- ❑ Formal recognition of the co-op experience on student records
- ❑ Agreement among the school, employer and the student on:
  - Job description and new learning opportunities
  - Specified minimum work periods
  - Monitoring of work by the school and supervision by the employer
  - Official school enrollment during employment
  - Employer recognition of student as an employee
  - Evaluations by student, school, and employer, with guided student reflection
  - Remuneration for student work
- ❑ Provision for employer and school evaluation of the quality and relevance of the work experience and curriculum
- ❑ Program design that maximizes outcomes for students, employers and the school

** Developed by NCCE Practitioners Committee, and endorsed by three national co-op organizations.*

Key Elements for Institutionalizing Work-Integrated Learning Curricula

There are several key elements for institutionalizing programs or curricula that integrate learning and work in higher education. In addition to the structural characteristics, colleges with strong co-op programs include:

- ❑ Articulation of co-op as central to the academic mission of the college or university
- ❑ Support from top administrators in the institution
- ❑ Recognition of the academic value by faculty members, and integration into their instruction
- ❑ Commitment to adequate institutional funding and personnel support for the administrative costs
- ❑ Support by other offices (registrar, financial aid, bursar, etc.) to facilitate participation in co-op
- ❑ Promotion of student and institutional benefits, including the development of appropriate data
- ❑ Support for the role of business in building the most effective, comprehensive curricula
- ❑ Commitment to quality work experiences that are productive and involve progressive responsibility and integrated learning

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American Council on Education

American Vocational Association

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Berkeley College

Bowie State University

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Business and Industry Association of New Hampshire

Business-Higher Education Forum

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Center for International Career Development

Center for Learning Connections

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